

Research Article

Educating Surgeons on Listening: A Critical Communication Skill

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Abstract

Introduction: Despite being a critical facet of patient care, there is a dearth of literature educating surgeons in particular and physicians in general on techniques for improving the critical communication skill of listening. Further, with the shift to care in the outpatient setting, skills specific to communication are being measured and have assumed greater importance due to public reporting. Communication skills are mutable and can be improved. We hypothesized that a short course in communication focusing on listening skills for academic surgical faculty could be presented with high levels of participation and satisfaction.

Methods: This one-hour course was designed to provide surgical faculty with a basic framework for communication specifically highlighting approaches to improve listening. The course included a short introduction to how communication can be measured, the move towards transparent reporting, the benefits of and barriers to good communication, and specific ideas on how to improve one's of listening ability. An anonymous satisfaction survey assessed strengths and opportunities for improvement of the course.

Results: Faculty attendance was 80% and the survey was returned by 54% of the participants. All satisfaction questions had mean responses ≥ 4.3 of 5.0. The benefits of good communication and material on listening had the highest scores.

Conclusion: Turnout was robust, and satisfaction was high. The data suggest that focusing on direct communication strategies in general and listening in particular were well received. Although our experience in course development for teaching communication and listening skills was focused on surgeons, the materials could be readily expanded to any cohort of busy clinicians.

Keywords: Listening; Surgical faculty; Consumer assessment of healthcare providers and services; Patient experience; Doctor communication; Outpatient care; Standardized patient

Abbreviations

AHRQ: Agency for Healthcare Research in Quality; CG-CAHPS: Clinician and Group; CMS: Centers for Medicare and Medicare Services; CAHPS for MIPS: Consumer Assessment of Healthcare Providers and Systems for Merit-based Incentive Payment System; HER: Electronic Health Record; MACRA: Medicare Access and CHIP Reauthorization Act of 2015; MIPS: Merit-based Incentive Payment System; PQRS: Physician Quality Reporting System; PVPM: Physician Value-based Payment Modifier; QPP: Quality Payment Program; SP: Standardized Patient

Introduction

Listening is a critical skill necessary for good physician-patient communication and a keystone of patient care; especially in the

outpatient setting. American healthcare is experiencing a seismic shift; outpatient visits-per 1,000 population-increased from 1,817 in 1999 to 2,251 in 2015 [1]. The outpatient share of hospital revenue has increased from 21% in 2010 to 60% in 2016 [1]. As a result, competency in physician-patient communication in the outpatient setting has assumed greater importance. Well designed and administered patient-experience surveys do provide important measures of quality patient care [2]. Highlighting the significance of patient experience, one important metric is that of physician communication [3].

Penn Surgery has developed an ongoing series of educational courses related to specific types of surgeon-patient communication; disclosure of medical error [4], inpatient communication skills [5], end of life care [6], and informed consent [7-9]. These efforts have been associated with ongoing improvement in departmental doctor communication scores [10]. We hypothesized that a short course in outpatient communication for academic surgical faculty could also be presented with high levels of participation and satisfaction. The course was focused on a specific set of communication-related skills important in the outpatient setting; especially that of listening. A PubMed search of [listening] and [surgery] or [surgeons] turned up 195 articles but none on how to teach listening skills. Expanding the search to [listening] and [physicians] yielded 769 articles; only 15 required review of full text and only two mentioned specific approaches to teaching of listening skills [11,12].

The Institute of Medicine's report Crossing the Quality Chasm identified patient-centered care-care guided by patient values, needs,

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and preferences-as one element of high quality healthcare [13]. Achieving patient-centered care has focused the efforts of healthcare systems on the patient experience; organizing care around the patient's needs, collaboration amongst clinicians, and an environment that promotes healing through stress reduction [14]. In 2008, the University of Utah Health Care system encapsulated the move to improve patient experience with an audacious statement "Medical care can only be truly great if the patient thinks it is" [15]. Three main measures for which physicians have control have been identified: communication (dominant), time spent, and access [16,17]. Such patient-centric measures are important indicators of health care quality [2]. Our course was developed to give context to the importance of listening as communication, and several elements were thought necessary.

Materials and Methods

Course logistics

We based course content based on available literature, discussion with faculty and with local educational experts. The lead author (SER) taught the course. The active surgical faculty of the Department of Surgery, University of Pennsylvania was invited to attend our course. To maximally disseminate the material, we held four live sessions; surgery grand rounds, cardiac surgery, plastic surgery, and urology rounds, but depending on how your organization's educational activities are structured, one session for all surgeons may be adequate. There was also an online version with audio for the faculty who could not attend in person. We selected facilitators-faculty members who coordinated the courses for the various divisions and talked it up among colleagues-to be surgeons in the discipline to which the course was directed (i.e., practicing surgeons).

We arranged for CME credit where possible; such credit can be an additional benefit for attendees. The usual assembly location can be used as for other educational conferences if audiovisual technology is available; a workstation or laptop computer hooked up to room-sized monitors or projection devices. The satisfaction surveys should be distributed as attendees enter, and collected as they leave. For pre- and post-test comprehension assessment if intended, either paper forms can be distributed and collected or an institutionally owned or online audience response tool can be used if available. Audience responses are beneficial as aggregate data can be immediately fed back and where necessary, additional education on thorny points provided. We suggest presenting the course within the confines of usual educational activity time slots; the course takes about one hour to teach.

There was no prerequisite knowledge needed by the faculty participants although all were actively involved in clinical practice. As a guide, five minutes for the pre-test, 8 minutes to 10 minutes were devoted to transparency initiatives (CG-CAHPS) and CMS changes to reimbursement. Benefits and barriers to good communication including options for improving communications skills should comprise an additional 8 minutes to 10 minutes. Thirty to thirty-five minutes should be devoted to strategies to improve the critical skill of listening. Five to ten minutes were allotted at the end for the post-test and debrief audience questions and answers.

Curriculum development

We will briefly discuss here how the course curriculum was developed, and more detail on the specific topics is provided in our Discussion. First, we introduced measurement of physician communication and public reporting. Individual surgeons' scores-good and bad-were shared with participants. In general, we try to

include individual physician scores relating to the course topic; such particularized data impacts engagement with the course. A short section on our own the evolution of our clinical practice plan was also included. We next discussed how patient satisfaction is measured [18-20]. We believe that although fundamentally communication, changes in milieu require focusing on a particular communication skill set or process. Arguably, outpatient communication could be considered its own construct as many healthcare institutions solicit the Clinician and Group (e.g., outpatient) Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) from patients [15,21-24]. How the individual CG-CAHPS data might be reported was explained as a part of healthcare systems and public reporting of patient satisfaction data [15,25,26]. To disabuse the learners about their ability to gauge how well they communicate with patients, some data on perceptions of satisfaction as a surrogate for communication was presented [27,28]. We next made explicit the link between good communication and patient outcomes with presentation of the benefits of and barriers to good physician-patient communication [29-31]. The role of empathy was touched upon [32-37]. At this point, we disclosed how the participants could learn to improve their skills by a variety of techniques depending on need [38-40]. The learners were made aware of some of the barriers to good communication [29,41-43]. Of the many possibilities for enhancing communication skills, listening is among the most important [44,45]. There are a number of high-impact listening strategies that can improve the surgeon's communication skills [46-53]. These were discussed in some detail and course participants were encouraged to try one or more in their next office hours session (Table 1).

Simulated outpatient encounter with a standardized patient

The Department of Surgery has collaborated with the Penn Standardized Patient (SP) Program to administer simulated outpatient experiences. A pre-session survey was administered to prompt self-reflection about areas for growth, and to facilitate the creation of a customized experience for the provider. The survey included both an open-ended question asking for "information that you think would be helpful" in developing the individualized encounter, and a checklist of various skills for further development. Standards of best practice in SP methodology were applied, from SP preparation to learner orientation and debriefing [54]. Learning objectives were communicated before the session and reiterated during orientation. A physician leader in Penn's Patient Experience [author JHM] participated in orientation and debriefing with the trainee.

Using an existing case from the SP Program's case bank, the instructions to the SP were modified to address the surgeon's self-identified areas for improvement (reflective listening, teach back) (Figure 1). The SP's training included at-home case study, on-site role play and repeated practice giving feedback on communication and interpersonal skills. The SP trainer met with the surgeon [author SER] as part of the pre-brief to review the survey responses and gain a clearer understanding of personal goals for the session. This information was then communicated to the SP and incorporated into training. The original case, a pre-operative visit for a patient with diverticulitis, was used for a surgery resident training program. The modifications included patient frustrations around wait time and general access-to-care issues reflected in Press-Ganey data. The loose script parameters enabled the SP to present a clinically relevant scenario while improvising pertinent communication challenges. The surgeon was presented with an overview of the patient's presenting

situation. After a 20-minute encounter, the SP provided verbal feedback to the surgeon from the SP's perspective, joined by the patient-experience physician, who offered insights from the provider perspective. The SP encounter was video-recorded and provided to the surgeon for further self-reflection. The session was well-received albeit resource-intensive. Adapting an existing case kept costs down, and customizing to individual learners may be scalable depending on the size of the intended faculty.

Satisfaction assessment

To assess satisfaction, a voluntary, anonymous questionnaire containing eight Likert-style questions and two free-text questions soliciting information on strengths and opportunities for improvement was distributed at the time of the course (Figure 2). The questionnaire was distributed to all, and there was a place for participants to identify by clinical role (i.e., faculty, resident/fellow, advanced practitioner). As the course was focused on faculty, only those surveys identified as faculty were used. Means and standard deviations were calculated and used to assess the null of differential average response compared to other items. This work was not considered human subject research by the University of Pennsylvania Institutional Review Board as it was educational and no individual identifiable information was collected.

Comprehension assessment

To assess comprehension, an eight-question quiz was developed in an attempt to highlight key points in the curriculum. An audience response website was used to allow participants to use their smartphones to text real-time answers to the questions and aggregate

FACULTY OUTPATIENT COMMUNICATION COURSE EVALUATION

Please rate today's Faculty Course in the following categories using the provided scale:
The goals of today's session were clearly communicated.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

The basic information on the evolution of CPUP was instructive.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

The information on MIPS-CAHPS was instructive and clearly presented.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

The information on public reporting and transparency was instructive and clearly presented.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

The information on the Penn Medicine Patient Experience efforts was instructive and clearly presented.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

The material on the benefits of good communication was instructive.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

The material on strategies for enhancing communication was helpful in improving communications with my patients.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

The material on listening as a critical communication skill was valuable.

STRONGLY DISAGREE 1 2 3 4 5 STRONGLY AGREE

What was the most valuable part of this session?

What improvements would you suggest for future sessions?

Figure 2: Evaluation Tool: The evaluation tool was devised specifically for this course, but adapted and improved based on feedback and validation from similar previous courses.

 **Perelman**
School of Medicine
UNIVERSITY OF PENNSYLVANIA
STANDARDIZED PATIENT PROGRAM

PMA Provider One-on-One

INSTRUCTIONS FOR TRAINEE

Allie Johnson

SCENARIO: You are a general/colorectal surgeon, in the office setting, seeing this patient in follow up after an admission 6 weeks ago for diverticular abscess requiring IR drain. The drain was removed by IR doctors 2 weeks ago. The patient had a colonoscopy earlier this week with GI which demonstrated multiple left sided diverticuli but no polyps or masses in the remainder of the colon.

VITAL SIGNS: **Temp:** 98.6
BP: 165/89
Pulse: 95
RR: 16
Pox: 100% on RA

TASKS: You have 15 minutes to meet with the patient to review test results and discuss next steps.

Y:\Standardized Patient Program\PROGRAMS\FMA\Provider One on One\Cases\Allie Johnson Doorway.docx

Figure 1: Standardized Patient (SP) Scenario: Penn Medicine Academy has a library of Standardized Patient Scenarios that are purposely skeletal so the educational team and SP can adapt and improvise based on the needs of the learners.

the responses. The online test was done by texting answers to the questions. The questions were asked in the same order before and after course presentation. Correct answers were not provided after the pre-test. The post-test provided the correct answers, correct response aggregate data for each question, and some feedback on why an answer was correct or incorrect, and well as Q&A with the attendees. We tested whether the responses to the comprehension questions changed from the pre to post-course time period using McNemar's test for paired binary data.

Results

For the satisfaction survey analysis, the data are restricted to the 45 responses from faculty; some residents, fellows and advanced practitioners also attended but were excluded as not having been specifically invited. For the voluntary, anonymous eight questions Likert-type survey assessing participant satisfaction with the materials a mean of ≥ 4.5 was arbitrarily accepted as satisfactory (Table 2). 84/105 (80%) faculty attended the course and 54% returned the survey. Survey questions that had responses ≥ 4.5 included Q1 *The goals of today's session were clearly communicated*; Q4 *The information on public reporting and transparency was instructive and clearly presented*; Q5 *The information on the Penn Medicine Experience was instructive and clearly presented*. Q6 *The material on the benefits of good communication was instructive*; Q7 *The material*

on strategies for enhancing communication was helpful in improving communications with my patients; and Q8 The material on listening as a critical communication skill was valuable. Two questions respectively had a mean score of 4.3: Q2 The basic information on the evolution of CPUP was instructive; and 4.4: Q3 The information on MIPS for CAHPS was instructive and clearly presented. For Q2, we rejected the null of equivalent means as significantly lower ($p = 0.03$). The free text comments were also tabulated. The most common valuable material was that on listening, mentioned five times (Table 3). The opportunities for improvement were a more diverse set of suggestions, but the most common response was 'None' (Table 3).

Despite high satisfaction scores, there were no significant changes in comprehension from before to after the course (Table 4). For all 8 knowledge questions, we were unable to reject the null hypothesis of no change. The p -values for the 8 questions ranged from 0.133 to 1.0. As such, comprehension was not significantly changed as measured during the course. The questions were the same, presented in the same order. The pre-test, in addition to testing baseline knowledge, attempted to highlight material of importance as a way to guide the attendees through the most important points that were also highlighted in the presentation materials. Often, the pre-test questions were answered correctly before the course suggesting questions with better discriminating power might have provided better separation (Table 4). In one question "Physician assessment of patient satisfaction correlates strongly with the patient's perception of physician listening. (False)" the percent of correct answers—although not significantly—went down.

Discussion

Course content

We deemed the provision of granular, substantive information with relevant references for course attendees important for their further education and interest.

The importance of patient satisfaction: We began with an overview of why patient satisfaction is important, ending with the importance attached to patient satisfaction as a quality metric and

CMS with the implementation of the Merit-based Incentive Payment System (MIPS). Although not a mandatory metric, we highlighted the importance CMS attaches to the patient experience. Patient satisfaction, including doctor communication may affect Medicare reimbursement. The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) replaced the unpopular Medicare sustainable growth rate methodology for the physician fee schedule with MIPS; currently the most commonly used avenue to incentivize high-quality patient care. MIPS consolidate components of the older Physician Quality Reporting System (PQRS), the Physician Value-based Payment Modifier (PVPM), and the Medicare Electronic Health Record (EHR) Incentive Program and replace them with the Quality Payment Program [18]. The Merit-based Incentive Payment System (MIPS) is one track of the Quality Payment Program (QPP), where clinicians earn a performance-based payment adjustment (positive or negative) to their Medicare payment. The CAHPS for MIPS survey is an optional quality measure that groups participating in MIPS can elect [55]. There are now three and soon to be four MIPS elements. The quality element includes the MIPS-CGCAHPS; a measure of patient satisfaction largely centered on communication. In 2019, Quality is responsible for 60% of physician reimbursements, although by 2021, cost will count for as much as quality [19].

Measuring patient satisfaction: We next explained how physician communication is measured. Press-Ganey is a leader in measuring patient satisfaction, working with over 41,000 customer organizations [21]. Press-Ganey developed a portfolio of Consumer Assessment of Healthcare Providers and Systems; (CAHPS) measuring the patient experience and developed for the United States Agency for Healthcare Research and Quality [22]. Good doctor-patient communication has been found to be especially important for less healthy Medicare beneficiaries' overall evaluations of their doctors [23]. The Clinician and Group CAHPS (CG-CAHPS) measures outpatient communication with patients; specifically spending enough time with patients, listening carefully, and providing understandable explanations [3]. CG-CAHPS survey items capture commonly mentioned doctor-patient communication behaviors. Going further,

Table 1: High impact listening skills.

Let the patient speak; use 'The Two Minute rule'. In a study of physician-patient encounters, the physician interrupted the patient and then directed questions towards a specific concern; in only one visit was the patient afforded the opportunity to complete their opening statement [46]. After asking patients to express their concerns, physicians were able to listen to patients' stories for an average of only 18 to 23 seconds before an interruption [46,47]. The 'Two Minute rule' allows the patient to speak without interruption for two minutes [48]. There are also respectful ways to redirect patients should their answers become uninformative [49].
Actively listen - Avoid distraction during the consultation, do not be off-hand or hasty, listen attentively, and lead the conversation [50].
Paraphrase the history; repeat the story back to the patient. Formulating the patient's stance by paraphrasing is a practice that physicians can use to elicit, check, and establish patients' attitudes towards diagnosis and treatment [51].
Validate the patient's concerns. Dismissing concerns of patient and/or family is disrespectful behavior likely to chill two-way communication [52].
Identify what concern is important to the patient. Frame the interaction around an open-ended question like 'What is the one thing that bothers you the most?' Patients often come in for a worry or fear they can't articulate. If the main concern is not identified, we may miss the real reason for the patient's visit sending them away with the feeling they were unheard [53].

Table 2: Satisfaction survey questions.

		Sample Size (N)	Mean	SD
q1	The goals of today's session were clearly communicated.	47	4.6	0.5
q2	The basic information on the evolution of the clinical practice plan was instructive.	47	4.3	0.8
q3	The information on MIPS-CAHPS was instructive and clearly presented.	47	4.4	0.7
q4	The information on public reporting and transparency was instructive and clearly presented.	47	4.5	0.6
q5	The information on the Penn Medicine Experience was instructive and clearly presented.	47	4.5	0.7
q6	The material on the benefits of good communication was instructive.	45	4.6	0.6
q7	The material on strategies for enhancing communication was helpful in improving communications with my patients.	47	4.5	0.7
q8	The material on listening as a critical communication skill was valuable.	46	4.6	0.5

Table 3: 'Hot comments': Positive feedback and Suggested Improvements.

Most Valuable Material	N	Suggestions for Improvement	N
The importance of the listening material	5	None	6
Structural information on practice plan	2	To include data regarding Nurse Practitioners	2
The emphasis on patient experience and values. This represents a needed shift in the patient/surgeon relationship	1	Less/fewer test-to-screen questions	1
Learning how listening can have a therapeutic effect for patients	1	Strategies to maximize other score improvements.	1
Presenter's teaching skills	1	Average Times- Ideal, Arrival, Check-in, MA, Room, DOC, NEW & RETURN	1
Communication stats	1	Longer Presentation	1
Description of good listeners	1	More examples of poor and good listening	1
Communication skills	1	More evidence-based practical avenues for improvement in communication plus correlation with what patients actually use i.e. non-validated sites such as Rate MD, etc.	1
Practical tips on communication, listening	1	More information on resources (internal/external) for coaching / communication skills	1
The '90 second rule'	1	More teaching about what "best communicators" look like may have been better use of time	1
Comprehensive nature of course	1	Survey far too elementary	1
Info. about MIPS	1	More information on learning the skill of empathy (referenced a Cleveland Clinic video)	1
Well done, presenter. I liked that he introduced himself as Person and not DOCTOR Person. Thus not putting the MD on a higher plane than the patient	1	Very little new information learned	1
The video that illustrated a difficult and awkward initial interaction with a frustrated patient who waited an hour to be seen. We have all been there, and it is not pleasant	1		
Total	19	Total	19

Table 4: Pre-Course and Post-Course Responses.

Question (Correct Response)	Pre - % Correct (N)	Post - % Correct (N)
Listening is an essential element of finding the diagnosis. (True)	98.75 (79/80)	100.00 (77/77)
Good communication between physician and patient can have a therapeutic effect (True)	97.53 (79/81)	97.5 (78/80)
Listening skills are a driver of the surgeon/patient relationship (True)	97.55 (81/83)	94.94 (75/79)
The majority of patients have a chance to complete their presenting complaint without interruption. (False)	86.49 (64/74)	87.36 (76/87)
Physician assessment of patient satisfaction correlates strongly with the patient's perception of physician listening. (False)	69.44 (50/72)	48.19 (40/83)
Physician task pressures such as the electronic health record may reduce effective communication (True)	92.00 (69/75)	94.62 (88/93)
Paraphrasing can serve as an effective skill to help insure the patient has been heard (True)	98.63 (72/73)	96.34 (79/82)
CMS now uses the Physician Quality Reporting System (PQRS) and Value-based purchasing (VBP) in part to reimburse clinical care (False)	8.45 (6/71)	3.41 (3/88)

practices identified by high-performing physicians (e.g., nonverbal communication, greeting patients, and acknowledging personal information about patients) have been identified as key aspects of doctor-patient communication, but are not captured by the current CG-CAHPS [24].

Healthcare systems and public reporting of patient satisfaction data: In 2012, the University of Utah, adopting a five-yellow-star format, was the first health system to post patient-satisfaction survey data and 'hot,' or free-text comments online [15]. In support of transparency, three goals have been articulated for online publication of patient feedback. First, online reviews help patients make more informed choices in physicians and hospitals. In one survey, fifty-nine percent of respondents reported physician rating sites to be somewhat or very important when choosing a physician [20]. Second, patient reviews can offer valuable feedback on physician performance. Lastly, health care systems that voluntarily share patient feedback visibly foster a spirit of trust with patients and the community [25]. Some strategies for dealing with negative online reviews were also presented [26].

Physician's perception of patient satisfaction: How good are physicians at predicting patient satisfaction? A convenience sample of 100 patients treated at an urban academic ED was studied. Physicians underestimated patient satisfaction by nearly 20% for the same encounter. Physicians also underestimated the pain level at time of disposition. Almost a quarter of the patients had moderate to severe

pain at discharge when the physician anticipated no pain [27]. The data show that physician and patient perceptions about the same encounter are divergent; physicians were not able to accurately predict patient satisfaction with their care or pain level.

In a separate study of inpatients, patients and physicians responded to selected questions about the interaction. Patients were asked: "Did doctors talk in front of you as if you were not there?" Physicians were asked: "How often do you talk in front of patients without including them in the conversation?" Patients rarely felt they were excluded from conversation, while physicians often felt they excluded patients [28]. Patients were also asked: "During this encounter, how often did doctors explain things in a way you could understand?" Physician was asked: "How often do you explain things in a way your patients fully and completely understand?" Patients were more likely to report they always understood, while physicians felt they rarely explained things fully and completely [28]. Again, the data show that physician and patient perceptions about the same encounter can be quite divergent.

Benefits of and barriers to good physician-patient communication: Next, the benefits of and barriers to good communication, were discussed. Options for sharpening communication skills were enumerated.

Benefits: Better outcomes: Good communication between patient and doctor improves satisfaction with care, the likelihood of sharing relevant history for accurate diagnosis and adherence to the prescribed

treatment [29,30]. Patients' agreement with the doctor about the nature of the treatment and need for follow-up is strongly associated with their recovery [31]. Effective doctor-patient communication is determined in part by the doctors' "bedside manner," which patients judge as a major indicator of their doctors' general competence [29].

Empathy: Physician empathy has also been associated with improved clinical outcomes and increased patient satisfaction [32,33]. Interpreters can aid the expression of physician empathy to patients [34]. Collaborative communication and empathy are reciprocal, dynamic relationships [37]. Physician empathy was the strongest driver of patient satisfaction in the hand surgery office setting [35]. Patient ratings of physician empathy are variable, with female practitioners more effective than male practitioners; the variability of patient perceptions of empathy are likely associated with variable patient health outcomes [36].

Good communication skills can be learned: Surgeons-as all doctors-have different talents; not all excel innately at communication. But with education in the theory of and practice in good doctor-patient communication these skills, and be capable of modifying their communication style if there is sufficient motivation and incentive for self-awareness, self-monitoring, and training. Skilled communication involves both style and content, having a positive impact on patient treatment adherence, self-management, and satisfaction [38]. Attentive listening, empathy, and use of open-ended questions are some examples of skillful communication. Interventions to promote patient-centered care can teach patient-communication skills to providers; especially complex interventions that include condition-specific educational content [39]. Patient simulation may also improve communication skills and empathy. In one randomized, controlled trial of didactic teaching with or without standardized patient simulation versus didactic teaching alone, intervention was associated with a significant increase in Consultation and Relational Empathy scores post-workshop compared with pre-workshop and the control group [40].

Barriers: There are also a number of barriers to good physician-patient communication: deterioration of doctors' communication skills; nondisclosure of information; doctors' avoidance behavior; discouragement of collaboration; resistance by patients [29]. In one systematic review of the barriers to good physician-patient communication strong evidence was found for physicians' lack of communication training and skills [41]. The Electronic Health Record (EHR) can also be a barrier to good communication. The proportion of time physicians spent looking at the computer monitor during EHR visits was significantly than with traditional paper records [42]. The electronic health record creates a lack of face-to-face communication between clinicians and patients [43].

Listening: A critical skill in surgeon-patient communication: Lastly, of the many options for improving physician communication skills, we focused on the critical role of listening so that participants could leave with concrete examples readily implemented in their practices. Of the many techniques to improve communication, listening to patients is perhaps most important. A group of physicians at McGill University asked patients whether listening is important and were told of three main strengths of good listening. First, and perhaps most obvious, listening was seen as enabling physicians to make accurate diagnoses. Second, listening acts as a healing and therapeutic agent. Lastly, listening is instrumental in creating and maintaining the doctor-patient relationship [44]. Clinical listening

entails gaining relevant clinical information and ensuring patients know they were heard.

Zenger & Folkman have observed that most individuals think good listening involves silence while others speak; interaction through non-verbal expressions (nodding of head) or non-verbal sounds ("Uh-Huh"), and verbatim repetition of what the other has said [45]. The leadership consultants then analyzed data describing the behavior of 3,492 participants in a program designed to help managers become better coaches. As part of this program, their coaching skills were assessed by others in 360-degree assessments. Zenger & Folkman identified the top 5% of those who were perceived as being the most effective listeners [45].

Four important observations emerged. First, the best listeners are those who engage in two-way dialog; periodically probing with insightful questions. Second, the best listeners build the other's self-esteem; creating a safe environment for open discussion of concerns. Third, good listening is a cooperative conversation allowing information to flow bi-directionally. Poor listeners were noted to listen only to criticize; using silence tactically to prepare a rebuke. Lastly, good listeners provide feedback that others will accept; opening up alternatives to a pre-determined plan of action [45]. There are a number of high impact listening strategies that are easy to use and we discussed these in some detail (Table 1).

Course satisfaction: The mean scores for the eight Likert-type satisfaction questions suggested the attendees thought the materials were of benefit. Questions for the three highest rated topics were; Q1 'The goals of today's session were clearly communicated'; Q6 'The material on the benefits of good communication was instructive'; and Q8 'The material on listening as a critical communication skill was valuable' were about the material presented on specific communication skills and how to listen (Table 2). Future courses will emphasize these topics as they resonated most deeply with the participants. Many of the 'hot comments' or free text responses suggested more in depth material on these topics would be helpful (Table 3). The other three questions had mean scores of ≥ 4.4 out of five: Q2 'The information on MIPS-CAHPS was instructive and clearly presented'. This question had by far the lowest percentage of correct answers; and the course designed to improve the score was not effective. Either the course did a poorer job of explaining this material or it did not resonate with the participants. Q3 'The information on public reporting and transparency was instructive and clearly presented'; Q5 'The material on strategies for enhancing communication was helpful in improving communications with my patients' (Table 2). The variability in scores suggests a level of discrimination by faculty to questions on the material; they were not just answering by rote.

Course comprehension: There are a number of interpretations for the lack of improved comprehension. Our course was information-dense, and scripted to minimize extraneous delays. It may be that we attempted to pack too much material into too short a time. Cognitive overload has been observed to be a ubiquitous element of all healthcare systems and can be defined as 'organizationally induced and constrained limited capacity processing' [56]. Cognitive load theory predicts that attention and memory limitations may influence the ability of participants to comprehend communication [56]. Our course was densely packed with information and may have overwhelmed the ability of attendees to comprehend all the material. Course materials may differ in complexity of individual elements and may not be altered by course manipulations; only simpler learning

tasks (i.e. less dense information load) [57]. The structure of the online audience participation platform precluded separating the faculty from any residents or advanced practitioners; but there is no reason to assume there would be a difference based on clinical role; all were privy to the same information. The number of responses was greater at the end, so some attendees may have come in after the material was presented.

Perhaps the most surprising finding is that a detailed discussion of the move to the QPP by Medicare “CMS now uses the Physician Quality Reporting System (PQRS) and Value Based Purchasing (VBP) in part to reimburse clinical care (correct answer: False)” Only 8.45% (6/71) got the question correct before the course and 3.41% (3/88) after. It is possible the material was not of interest to the participants. To date, there have been no decreases in faculty reimbursement related to the transition to QPP, so the material may not ‘feel real’.

Limitations of the course and assessments: Given the complex nature of the material presented, the post-test was developed to assess comprehension at a basic level. A decision was made to use true-false questions rather than multiple choice questions. The material tested was basic knowing, the lowest level in Bloom’s cognitive domain [58]. The knowledge to be tested was developed by the course faculty presenter [SER] No attempt at validation was made. How the material in a question is worded may impact the ability to assess basic principles as opposed to winnowing out those who do not pay close attention has not been addressed. The small sample size represented here precludes any sweeping conclusions, but question design and validation are matters worth more consideration.

There were additional limitations in the pre & post-test design. The audience response system chosen was not set up to allow identification by participant role. Not all participants answered all questions. However, although allowed to attend, no attempt to ‘encourage’ house staff, fellows, or advanced practitioners was made for this course that was focused on faculty. Some non-faculty presumably also answered the pre & post-course quiz; hence the total number of responses was greater than the number of participating faculty. There was no way to sort the answers by level of education or role. Lastly, True/False questions were written rather than multiple choices; limiting the ability of the questions to get past the lowest level of Bloom’s cognitive domain: remembering [58]. Future courses will address these limitations in the current study.

Conclusion

The shift to outpatient care will assert more influence on surgical practice. Patient satisfaction is measured and publicly available. Good communication is important for optimum patient care. Communication skills can be learned. Listening is a critical communication tool. Faculty attendance for our course was robust, and satisfaction was high. The benefits of good communication and material on listening had the highest scores. The data suggest that focusing on direct communication strategies may be better received than details on changes in reimbursement. More study is needed to demonstrate improved comprehension. Our experience in course development for teaching communication skills relevant to the outpatient setting highlights an important topic in contemporary surgery and medicine, and can be readily adapted to any group of physicians, house staff, or advanced practitioners.

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